

custodial care. Such facilities should be developed at county farms and should be used only for such persons and not for those patients in need of treatment. Smaller counties should join together on this project.

The state hospitals for the mentally sick are charged with the medical and social responsibility for a large number of sick persons, both while they are patients in the hospitals and while they are readjusting to the normal life in the community. The work of these hospitals forms an important chapter in the mental hygiene program of any state. California's first state hospital was established in 1860 and, continuously since then, the state has not deviated from the policy of complete state care, although one large county under the operation of the Psychopathic Parole Act has cared for large numbers of patients without commitment. California has six hospitals devoted entirely to the care of mentally sick patients. On June 30, 1930, they were caring for 14,906 patients; and 1293 were on parole or otherwise absent. This gives a ratio of 261 state hospital patients to 100,000 general population. During 1929, 5752 insanity complaints were issued and 4540 patients were admitted to these hospitals—a ratio of 83 patients to 100,000 general population. In the last fifteen years, California has almost doubled in general population, but the number of patients in state hospitals has not grown proportionately. The drop in ratio does not mean that mental disease is decreasing; it probably means that a building program has not been maintained to meet the needs of a rapidly growing state.

#### RECOMMENDATIONS PROPOSED TO INCREASE EFFICIENCY OF STATE HOSPITALS

A few of the recommendations follow, meant to better equip the state hospitals for their important clinical responsibilities: Expansion of capacity to 19,000 beds within five years, with replacement of antiquated buildings unsuitable for the care of sick persons; financial support to provide a per capita allowance of at least one dollar a day (now about sixty-nine cents a day); conversion of two state hospitals, proximate respectively to Los Angeles and San Francisco, into acute psychopathic hospitals; better record work through larger medical staff, more use of trained social workers, more stenographic assistance and statistical service from the Department of Institutions. Each hospital should have: a reception service to maintain continuous treatment of approximately 10 per cent of the total hospital population; a well trained clinical director, with full time for clinical activities; at least one physician to 200 patients (now 1 to 304); a trained pathologist; at least one full-time dentist to every 1500 patients; a chief physiotherapist with four to six assistants; the application of a well-planned occupational therapy program to every patient capable of being benefited by activity; a recreational director; a trained psychiatric nurse with graduate standing in charge of nursing and at-

tendant personnel and responsible for their assignments; one attendant to every nine patients (now 1 to 11.3).<sup>†</sup> Increase in salaries is indicated all down the line.

#### "CRIMINAL INSANE" AND DRUG PATIENTS

The term "criminal insane" has little validity, as the study indicates that a large proportion of these patients showed evidence of mental disturbance before the criminal act was committed. Better psychiatric facilities in community and court would effect the commitment to hospital of more of these patients before the commission of a criminal act. Custodial facilities in one of the state hospitals will be expanded to care for 300 of these patients, according to present building plans. These additional quarters should permit transfer of custodial patients from the other hospitals and should entirely relieve San Quentin prison of those mental patients now being kept in the so-called "crazy alley." This is the top gallery of one of the cell blocks, which has been set aside for the housing of this group. These men do no work, but are kept away from contact with the rest of the prison population and spend a large part of their time in their cells. These psychotic patients are only the more obvious ones. Mixed in with the 7000 men in San Quentin and Folsom prisons are large numbers—no one knows how many—who are definitely insane.

The drug colony needs a great deal more equipment both for treatment and for occupational therapy. This hospital should have an adequate social service staff both for assistance in obtaining histories and for supervision of patients on parole.

(To be continued)

#### PARALYSIS—FROM SPURIOUS JAMAICA GINGER EXTRACT\*

##### REPORT ON LOS ANGELES COUNTY OUTBREAK

By FRANK G. CRANDALL, M. D.  
*Whittier, California*

**B**EFORE January 15, 1931, the disease or condition known as "jake paralysis" was unknown in California except for the reports of an outbreak of Jamaica ginger paralysis which occurred last year in the middle western and southern states. Therefore, nothing of the character of "jake paralysis" was suspected by a physician in Whittier when, on January 18, a man aged sixty, with symptoms of nausea and vomiting, abdominal cramps and a severe diarrhea, was visited.

#### REPORT OF CASE

The patient was sent into the local hospital. Laboratory tests for amebic and bacillary dysentery were

<sup>†</sup> The budget passed by the 1931 legislature provides for the biennium, a ratio of one attendant to ten patients.

\* From the health department of the county of Los Angeles.

\* For other comment on "jake paralysis," see *California and Western Medicine*, November 1930, page 823, and May 1931, page 378.

negative. Blood count was normal. Blood Wassermann was negative. Temperature was normal. In three days the patient had recovered sufficiently to return home. His gastro-intestinal symptoms had all cleared up, but in about ten days he began to develop soreness in the muscles of the calves of his legs and stiffness and numbness in his toe. This was rapidly followed by difficulty in walking and bilateral foot drop. Upon attempting to walk, the patient was forced to hold on to some object for support and had a characteristic flail foot gait.

His physician reported the case to the writer as a suspected poliomyelitis. After a careful examination and consultation with Dr. George H. Roth of the health department of the county of Los Angeles, a diagnosis of "jake paralysis" was made.

This patient, within a few days, became unable to use his fingers, especially the thumb and forefinger. Later, he developed a bilateral wrist drop and the fingers were drawn up from the loss of function of the extensor group of muscles. He was sent to the Los Angeles County General Hospital and has been confined to his bed since that time. He is not able to walk or stand up or even dress or feed himself.

#### COMMENT

To the writer's knowledge, this was the first case of "jake paralysis" diagnosed and recognized in the recent Los Angeles outbreak. An interesting point in this case was that at first this "jake" victim denied that he had used any alcoholic beverage, but after continued questioning, admitted that he had drunk the contents of two bottles containing two ounces each of Jamaica ginger on January 18. He claimed he did not know the source of his supply and he had destroyed the bottles. The writer noticed a new 1931 calendar on the wall of the room, put out by a local drug store and accused the man of buying it there. He confessed that he had been buying it from this store for years. As a result of this information, the writer, assisted by Mr. Frank Foreman of the county health department, located twelve other "jake" victims in Whittier the next day—nine men and three women—and a week later two more men, making a total of fifteen patients from the city of Whittier. The druggist from whom they had all purchased their supply had destroyed the remainder of his stock so that no samples were available for analysis. However, enough was found in the bottles in the homes of some of the victims to show that it was below the standard of the United States Pharmacopeia, although the presence of the adulterant, tri-ortho-cresyl-phosphate, could not be demonstrated.

The case described above is a typical "jake paralysis" of the severe type. The writer has seen and studied about seventy-five cases during our outbreak and practically all of them showed the same symptoms with the exception that some did not develop the acute gastro-intestinal upset as in this patient and some of them were not so badly paralyzed. The milder cases were in patients who showed a slight improvement insofar as their hands were concerned, and some of the victims seemed to think their feet have improved. But, from our observation, the paralysis is permanent and what really occurs is that the individual learns

to use, and develops, other muscles to take the place of those paralyzed, the paralysis being due to the degeneration of the nerves supplying the muscles. The patient thinks because he can use his hands and feet better, as time goes on, that he is gradually recovering.

By order of Dr. J. L. Pomeroy, Los Angeles County Health Officer, a thorough investigation was made of these cases and it was found that all of them could be traced to one source, namely a brand labelled "Superior Brand" fluid extract of ginger, United States Pharmacopeia, which had been bottled, labeled and distributed throughout this territory by the California Extract Company, located at 443 South San Pedro Street, Los Angeles, and which was owned and operated by Jacob Rosenbloom, his wife and two sons. Later investigation showed that all the cases at the National Soldiers' Home in Sawtelle, thirty-five in number, as well as all the cases occurring in Los Angeles City, could be traced to this brand, and one other, known as "Superb," which came from the same original source, namely, a firm by the name of Jordan Brothers, New York City. Rosenbloom purchased his supply from this firm in barrel lots and bottled and labeled it in his Los Angeles plant and distributed it in two-ounce bottles in gross lots to the retail drug stores.

#### UNITED STATES PUBLIC HEALTH SERVICE INVESTIGATIONS

We were very fortunate in having Dr. Maurice I. Smith, Senior Pharmacologist of the United States Public Health Service from Washington, D. C., visit our department the last week in February. Doctor Smith, in 1930, discovered the cause of "jake paralysis" and has carried on an extensive investigation along this line which has been reported in the *United States Public Health Reports*. With the writer, Doctor Smith visited a large number of the "jake paralysis" victims and confirmed the diagnosis. The county laboratory was turned over to Doctor Smith while he was here, and chemical and pharmacological tests were made on samples of fluid extract of Jamaica ginger which showed the presence of tri-ortho-cresyl-phosphate in some of the samples.

#### OFFICIAL ACTION TAKEN IN LOS ANGELES COUNTY

Immediately following our investigation in Whittier, every drug store within the county health department's jurisdiction was visited and a check up made as to their supply of Jamaica ginger. All "Superior Brand" ginger was quarantined. Only one drug store was found in the city of Whittier selling this brand. That druggist had sold forty bottles of a shipment of one gross which he received on January 17. The contents of forty bottles of this stock supplied fifteen paralysis patients.

The writer filed complaints, under the California State Pure Drugs Law, against E. J. Lewis, proprietor of the Greenleaf Pharmacy in Whittier, for selling mislabeled and misbranded drugs.

He pleaded guilty in Justice Court in Whittier on March 4, 1931, and was fined \$150. Another druggist, H. A. Ball of Santa Fe Springs, pleaded guilty and was fined \$25, as no known cases of paralysis developed from the sales he made.

Jacob Rosenbloom was taken into Municipal Court by the writer, and with the coöperation of the Los Angeles City Prosecutor's Office, was found guilty by a jury of eleven women and one man and sentenced by Judge Ellis A. Eagan on May 16 to one hundred and eighty days in jail and \$500 fine, which is the maximum penalty under the law. About fifteen other charges are pending against him in addition to the Federal charge of conspiracy to evade the National Prohibition Act. Up to the date of this paper, May 21, 1931, the only prosecutions which have been made in this state against those selling adulterated fluid extract of ginger, have been made by the Los Angeles County Health Department and convictions have been secured in each case.

Dr. J. L. Pomeroy, with the coöperation of the district attorney's office and State Senator McKinley, succeeded in having this year's state legislature pass a bill requiring a physician's prescription to obtain fluid extract of ginger from a drug store. So far as is known, this is the first and only legislation which has been passed by any state to protect its citizens against "jake paralysis."

The recent outbreak of "jake paralysis" may be said to be an end result of so-called prohibition. Almost all of these cases give a history of having used liquor for many years. When the Volstead Act became a law and they were deprived of their usual toddy or daily drink of whisky, they could not afford to pay bootleggers' prices or buy prescription whisky, so they bought their fluid extract of jamaica ginger for fifty cents a bottle. It was the poor man's way of getting a drink of liquor. As one of these victims told the writer, he was afraid of bootleg liquor but thought it would be safe to buy fluid extract of jamaica ginger, containing 85 per cent alcohol and with the United States Pharmacopeia stamp on the label, from the druggist from whom he had bought drugs for many years. Little did he realize that the bootleggers had taken advantage of the demand for this old household remedy as an alcoholic beverage, and had adulterated it and poisoned it with a ginger substitute, tri-ortho-cresylphosphate, in order to make greater money profits. One woman victim had purchased the jamaica ginger extract for stomach cramps and is paralyzed as a result!

Los Angeles County will now have as county charges most of these two hundred "jake" victims for the rest of their lives because they couldn't get along without some form of alcoholic stimulant, even if we do have the Eighteenth Amendment. It needs no great stretch of the imagination to calculate the outlay of the thousands and thousands of dollars which in the course of years the taxpayers will thus be called upon to pay in the care of these now public dependents.

Whittier Health District.

## POSTURAL TENSIONS FOR NORMAL AND ABNORMAL HUMAN BEHAVIOR—THEIR SIGNIFICANCE\*

### PART I

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DISCUSSION by H. G. Mehrrens, M.D., San Francisco;  
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THE significance of postural tensions of unstriped and striped neuromuscular reflexes for human behavior is too wide a subject to be covered amply in a single paper.

### SCOPE OF THIS PAPER

It is necessary to limit this presentation to the more outstanding functions, applying them to normal and abnormal behavior.

First, we need to abandon the old sterile ways of approaching the riddle of human behavior. We avoid the dilemmas which follow from assuming a psychophysical parallelism; we do not accept the condensed hypothesis of the neurologists who claim that the brain is the organ of the mind; neither do we use the ancient academic theory that there is a mind functioning in reciprocal coöperation with the body. None of these hypotheses gives the medical sciences a way of correlating man's mentation, emotion, and physiology, so that the physician can intelligently treat his cases wherein an organic or functional pathology makes for abnormal behavior, or abnormal behavior produces functional or organic pathology.

Moreover, we do not care to reduce such functional attributes of the personality as the ego or mentation to physiochemical processes within the nerve cell, for such a process would be like trying to explain literature in terms of letters of the alphabet.

We cannot use Freud's theory of a libido principle because it assumes that the libido principle becomes mysteriously converted into

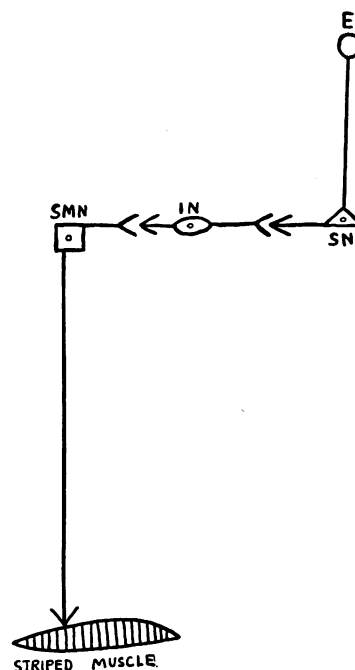


Diagram 1.—Old concept of stimulus and response of motor nerve and muscle without concept of muscle tonus. E, exteroceptor; SN, sensory neurone; IN, intercalated neurone; SMN, somatic motor neurone.

\* Read before the Neuropsychiatry Section of the California Medical Association at the fifty-ninth annual session at Del Monte, April 28 to May 1, 1930.